

Claims 1-21 (withdrawn).

Claim 22 (previously amended) An isolated nucleotide sequence, wherein the nucleotide sequence encodes a protein comprising the amino acid sequence of SEQ ID NO:63.

Claim 23 (withdrawn).

Claim 24 (currently amended) An isolated nucleotide sequence comprising

(i) the nucleotide sequence of SEQ ID NO:36;

(ii) a nucleotide sequence that hybridizes to SEQ ID NO:36 under high stringency conditions, wherein said high stringency conditions comprise hybridization conditions comprising 50% formamide and 5X SSPE at 50°C and washing conditions comprising 0.5X SSPE at 60°C, and wherein said nucleotide sequence encodes a potassium channel, wherein said potassium channel comprises a first pore-forming domain interposed between a first and a second transmembrane helix and a second pore-forming domain interposed between a third and a fourth transmembrane helix, and wherein the first pore-forming domain comprises SEQ ID NO:57, wherein

X at positions 1, 4, and 5 are T or S;

X at position 5 is I or V; and

X at position 8 is V, L, Y, F, M, or I;

(iii) a nucleotide sequence that is degenerate to the nucleotide sequence of SEQ ID NO:36; or

(iv) a functional derivative comprising at least 40% homology to the nucleotide sequence of SEQ ID NO:36.

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Claims 25 and 26 (withdrawn).

Claim 27 (currently amended) A vector comprising the nucleic acid of Claim 22
or Claim 24.

Claim 28 (withdrawn).

Claim 29 (previously amended) A vector comprising the nucleotide sequence of
Claim 24.

Claim 30 (previously amended) A transformed yeast cell comprising the vector
of Claim 27.

Claims 31 and 32 (withdrawn).

Claim 33 (currently amended) A kit comprising the nucleotide sequence(s) of
Claim 22 or Claim 24.

Claims 34 and 35 (cancelled).

Claims 36-39 (withdrawn).

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